

Why Not Take All Of Me?

Did you know that about one-fifth of every pine tree harvested remains underground and not visible to the naked eye?

Why then couldn't land managers utilize this wood, thus getting the most out of any tree cut and keeping the number harvested to a minimum?

Good idea, says Forest Service researcher Dr. Peter Koch, who has designed a machine to pluck the taproot from the ground—like a big carrot—while it is still attached to the tree trunk.

A look at a slash pine root hanging in Dr. Koch's laboratory quickly reveals the amount of wood involved. A 22-year-old slash pine growing in sandy loam soil normally has a taproot about 5 feet long, with a diameter a few inches below the ground one and a half to two times the stem diameter at breast height. Chemical properties don't differ greatly from the stemwood. The taproot, therefore, should be a suitable source of pulpwood, according to Dr. Koch.

Koch's machine shears off the lateral roots close to the taproot, leaving them in the ground. The laterals comprise less than one-third the weight of the root system and would greatly increase the difficulty of extraction, transportation, and chipping. The roots are severed with a tubular shear sharpened on its lower edge and hinged like a big clam shell to encircle the tree.

To try the idea, Rome Industries of Cedartown, Georgia, made a prototype of the machine, which was tested during

September 1973 with 15-year-old plantation-grown pines on dry, hard Georgia clay.

The concept worked as planned. The shear was driven into the ground to sever the lateral roots. Then the tree trunk and taproot were lifted through the shear. The hole left by the root was neat and small. It quickly caved in as the harvesting machine moved about the area.

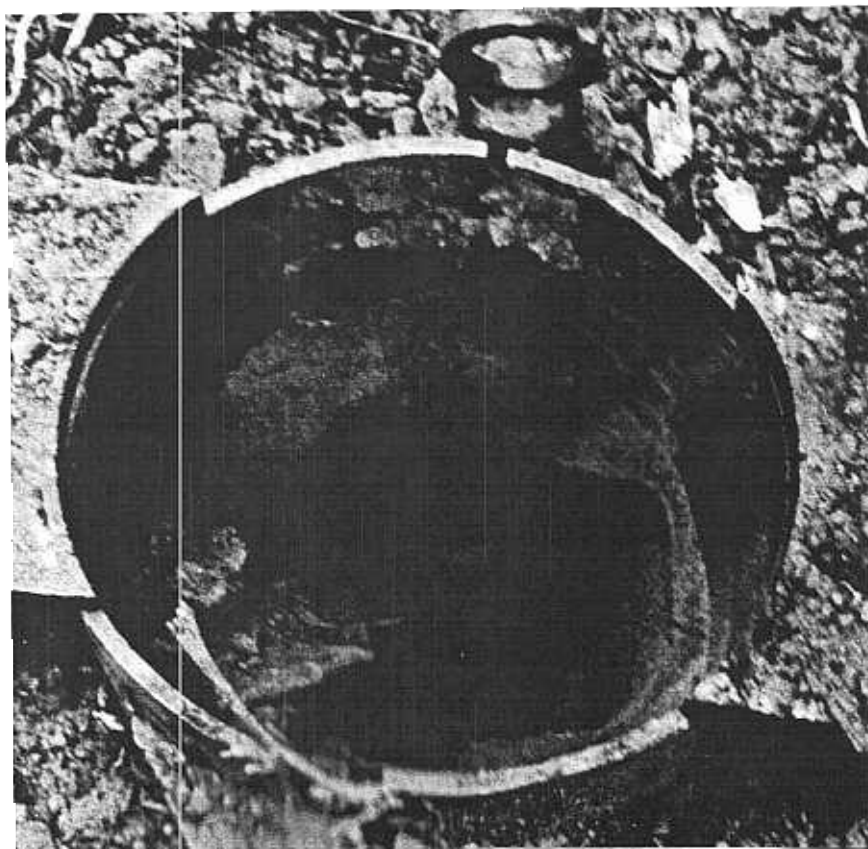
A second prototype is being designed. If the research proves successful, it will permit owners of plantations in rock-free soil to harvest 20 percent more wood weight per acre than they normally did.

More information is available in an article which appeared in SOUTHERN LUMBERMAN magazine January 1, 1974, and in the May 1974 issue of the JOUR-



NAL OF FORESTRY. Reprints of both articles are available from the Southern Forest Experiment Station, 701 Loyola Avenue, New Orleans, Louisiana 70113.

A tubular shear sharpened on its lower edge severs lateral roots.





The taproot, still attached to the trunk, is plucked from the ground like a big carrot. Only a neat, small hole is left by the root.

